

ABSTRACT OF THE DISCLOSURE

Disclosed is an apparatus for use within a microwave radiation field which enables the operator to perform successively a plurality of chemical or physical processes while the apparatus remains in the microwave cavity. The apparatus according to the invention can be used to perform a total microwave solvent extraction including the steps of drying, extraction, filtration, and concentration. Other examples of processes, which are carried out with this apparatus are digestions, hydrolyses, separations, agitations, and precipitations.

The apparatus is constructed from a container having an inside vessel. The container and the inside vessel have a substantially closed volume there between. The container and the inside vessel are in fluid communication through a glass fiber filter disposed at approximately the bottom of the inside vessel. The container and the inside vessel are in fluid communication with a plurality of inlet and outlet ports, which provide or receive fluids to or from the inside vessel or the volume between the container and the inside vessel. The ports are also used to increase or decrease the fluid communication between the container and the inside vessel through the filter disposed near the bottom of the inside vessel. The glass fiber filter is removable from the inside vessel and can be replaced with a new one.